

ABSTRACT OF THE DISCLOSURE

In a method and a system for forming a copper thin film in which a raw material gas is introduced into a substrate processing chamber storing a substrate and being under a reduced pressure to form a copper thin film on the substrate, an addition gas is introduced into the substrate processing chamber in addition to the raw material gas at the initial stage of deposition. Thereafter, the introduction of the addition gas is stopped, while the introduction of the raw material gas is continued. Alternatively, an addition gas is introduced into the substrate processing chamber before the start of the deposition process, and the addition gas is introduced into the substrate processing chamber in addition to the raw material gas at the initial stage of deposition. Thereafter, the introduction of the addition gas is stopped, while the introduction of the raw material gas is continued.